

Is Reprocessing a Waste Management Solution?
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Summary

Is reprocessing and the recycling of plutonium a waste management solution? In terms of volume, heat and toxicity, reprocessing does little to reduce the repository burden. Since the fission product high-level waste contains americium, curium and neptunium, this waste will remain toxic essentially forever. These specific actinides and technetium-99 and iodine-129 cannot easily be separated from high-level waste and transmuted to shorter-lived radionuclides. In addition, a self-sustaining plutonium recovery program also requires a large number of neutron-producing breeder reactors. While commercial reprocessing and recycling of plutonium has been successfully accomplished in France and Great Britain, it has only served to move the high-level waste to a different location, not to “solve” the waste problem.